

WHAT IS CLAIMED IS:

- 1 1. A method including:
 - 2 generating a first check word based on incoming data;
 - 3 generating a second check word based on stored data;
 - 4 comparing the first check word to the second check word;
 - 5 generating a comparison result; and
 - 6 indicating a failure based on the comparison result.
- 1 2. The method of claim 1 wherein generating the second check
2 word occurs at a time subsequent to the data being stored
3 and prior to the data being overwritten.
- 1 3. The method of claim 1 further comprising:
 - 2 generating the second check word during periods of time
 - 3 when the device storing the data is in an idle state.
- 1 4. The method of claim 1 further comprising:
 - 2 synchronizing the generation of the second check word to
 - 3 the reading and writing of the data.
- 1 5. The method of claim 1 wherein generating the second check
2 word further comprises reading bytes from a selected set of
3 memory locations.
- 1 6. The method of claim 5 wherein the selected set of memory
2 locations includes memory locations included in a single
3 memory.
- 4 7. The method of claim 5 wherein the selected set of memory
5 locations includes memory locations included in multiple
6 memories.

7 8. The method of claim 7 further comprising reading the
8 multiple memories simultaneously.

9 9. The method of claim 1 wherein the first check word is
10 stored in a write accumulator.

1 10. The method of claim 1 wherein the second check word is
2 stored in a read accumulator.

1 11. A method comprising:
2 generating a first check word based on incoming data to a
3 subset of a plurality of memories;
4 reading a set of data stored in the subset of the memories;
5 generating a second check word based on the set of data;
6 comparing the first check word to the second check word;
7 generating a comparison result; and
8 indicating a failure based on the comparison result.

1 12. The method of claim 11 wherein reading a set of data
2 stored in the predetermined subset of the memories includes
3 reading data from multiple memories simultaneously.

1 13. A computer program product tangibly embodied on a
2 computer readable medium, for checking contents of a memory
3 in network switching environment comprising instructions
4 for causing a computer to:
5 generate a first check word based on incoming data;
6 generate a second check word based on stored data;
7 compare the first check word to the second check word;
8 generate a comparison result; and
9 indicate a failure based on the comparison result.

1 14. The computer program product of claim 13 further
2 comprising instructions to:
3 generate the second check word at a time subsequent to the
4 data being stored and prior to the data being overwritten.

1 15. The computer program product of claim 13 further
2 comprising instructions to:
3 generate the second check word during periods of time when
4 the device storing the data is in an idle state.

1 16. The computer program product of claim 13 further
2 comprising instructions to:
3 synchronize the generation of the second check word to the
4 reading and writing of the data.

1 17. The computer program product of claim 13 further
2 comprising instructions to:
3 generate the second check word by reading bytes from a
4 selected set of memory locations.

1 18. The computer program product of claim 13 further
2 comprising instructions to:
3 read multiple memories simultaneously.

1 19. The computer program product of claim 13 further
2 comprising instructions to:
3 store the first check word in a write access generator.

1 20. The computer program product of claim 13 further
2 comprising instructions to:
3 store the second check word in a read access generator.

1 21. A computer program product tangibly embodied on a
2 computer readable medium, for checking contents of a set of
3 memories in network switching environment comprising
4 instructions for causing a computer to:
5 store data in multiple memories;
6 generate a first check word based on incoming data to a
7 predetermined subset of the memories;
8 read a set of data stored in the predetermined subset of
9 the memories;
10 generate a second check word based on the set of data;
11 compare the first check word to the second check word;
12 generate a comparison result; and
13 indicate a failure based on the comparison result.

1 22. The computer program product of claim 21 further
2 comprising instructions to:
3 generate the second check word at a time subsequent to the
4 data being stored and prior to the data being overwritten.

1 23. The computer program product of claim 21 further
2 comprising instructions to:
3 generate the second check word during periods of time when
4 the device storing the data is in an idle state.

1 24. The computer program product of claim 21 further
2 comprising instructions to:
3 synchronize the generation of the second check word to the
4 reading and writing of the data.

1 25. The computer program product of claim 21 further
2 comprising instructions to:

3 generate the second check word by reading bytes from a
4 selected set of memory locations.

1 26. The computer program product of claim 21 further
2 comprising instructions to:
3 read multiple memories simultaneously.

1 27. The computer program product of claim 21 further
2 comprising instructions to:
3 store the first check word in a write accumulator.

1 28. The computer program product of claim 21 further
2 comprising instructions to:
3 store the second check word in a read accumulator.